

42. The modular construction system of claim 39, wherein the joint closure elements cover the spaced-apart opening between the struts of adjoining panels along the sides thereof.

### **REMARKS**

Claims 19-33 are pending in the application. This amendment cancels claims 19-24 and 26-29, amends claims 25, 30, 31, 32 and 33, and adds new claims 34-42. In view of the cancellation of claims 19 and 20, the Examiner's rejection of these claims under 35 U.S.C. § 112, second paragraph, are considered moot and will not be discussed in this amendment. The Applicant believes that amended claims 25, 30, 31, 32 and 33, and newly added claims 34-46 are in proper form for allowance.

Claims 25, 30, 31 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 25, 30, 31, 32 and 33 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims. Therefore, claims 25, 30, 31, 32 and 33 should now be in proper form for allowance.

The Applicant presents new claims 34-42 that remove the indefiniteness from the original claims and include elements to distinguish the claims from the prior art. Nothing in the Fay reference or any other cited prior art references teach or suggest such an inventory of panel shapes being connected together as in the present invention for building three-dimensional structures having unique shapes and sizes.

In view of the amendments and remarks presented above, the Applicant believes that the application is now in condition for allowance, and requests reconsideration of the application and

allowance of the claims. The Applicant respectfully requests that the Examiner telephone the undersigned in the event a telephone conference would expedite prosecution of the application and allowance of the claims.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Claims:**

In accordance with 37 C.F.R. § 1.121(c)(1)(ii), the following is a marked-up version of the amended claims.

Claims 19-24 have been canceled.

25. (Amended) ~~The modular construction system of claim 19,~~ A modular construction system comprising:

an inventory of panel shapes that are derived from a common format, the format being a three-dimensional grid defined by twenty-seven sub-cubes within a single larger cube, the sub-cubes having corners that form sixty-four vertices within the grid, wherein straight line radians drawn from each of the sixty-four vertices to each of the other sixty-three vertices form fifty-nine panel shapes, wherein the panel shapes form panels having a plurality of sides and a plurality of corners;

a means for constructing a structure using the panels from the inventory of panel shapes, wherein a plurality of panels are connected at a plurality of angles with respect to each other about a given axis centered between and parallel to the panel sides, and about given vertices where the axes between the panels sides being joined intersect;

wherein the plurality of panels include structural, load bearing struts attached along the panel sides, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels; and

wherein the struts of the panels being joined are spaced-apart and offset from the axis centered between the ~~two vertices~~ panel sides and are joined to a common tubular element by means of webs and brackets that are attached to the struts for joining at least two panels together.

Claims 26-29 have been canceled.

30. (Amended) ~~The modular construction system of claim 29;~~ A modular construction system comprising:

an inventory of panel shapes derived from a three-dimensional grid defined by twenty-seven sub-cubes within a single larger cube, the panel shapes forming a plurality of panels having a plurality of sides and a plurality of corners;

a means for connecting a plurality of panels together at any angle through 360 degrees about any axis centered between the panel sides and at any dihedral angle with respect to each other for building three-dimensional structures;

wherein the plurality of panels include struts attached along the sides of each of the panels, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels;

wherein the means for connecting the plurality of panels together includes at least one joinery assembly; and

~~further comprising a first~~ wherein the joinery assembly ~~that~~ includes at least one web attached to the struts of at least two panels, at least one collar having an opening extending therethrough, ~~and~~ at least one tab extension extending from one side of the collar that attaches to the ~~at least one~~ web with fasteners, and a tubular element that extends through the opening in the ~~at least one~~ collar for connecting a plurality of panels together.

31. (Amended) ~~The modular construction system of claim 30,~~ A modular construction system comprising:

an inventory of panel shapes derived from a three-dimensional grid defined by twenty-seven sub-cubes within a single larger cube, the panel shapes forming a plurality of panels having a plurality of sides and a plurality of corners;

a means for connecting a plurality of panels together at any angle through 360 degrees about any axis centered between the panel sides and at any dihedral angle with respect to each other for building three-dimensional structures;

wherein the plurality of panels include struts attached along the sides of each of the panels, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels, wherein the struts of the panels being connected are spaced-apart and offset from the axis centered between the panel sides;

wherein the means for connecting the plurality of panels together includes at least one joinery assembly;

wherein the joinery assembly includes at least one web attached to the struts of at least two panels, at least one collar having an opening extending therethrough, at least one tab extension extending from one side of the collar that attaches to the web with fasteners, and a tubular element that extends through the opening in the collar for connecting a plurality of panels together; and

wherein the first joinery assembly further includes at least one joint closures closure for covering the space spaced-apart opening and joinery assembly between the struts and bracing elements for securing the panels in place of connected panels.

32. (Amended) ~~The modular construction system of claim 29,~~ A modular construction system comprising:

an inventory of panel shapes derived from a three-dimensional grid defined by twenty-seven sub-cubes within a single larger cube, the panel shapes forming a plurality of panels having a plurality of sides and a plurality of corners;

a means for connecting a plurality of panels together at any angle through 360 degrees about any axis centered between the panel sides and at any dihedral angle with respect to each other for building three-dimensional structures;

wherein the plurality of panels include struts attached along the sides of each of the panels, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels, wherein the struts of the panels being connected are spaced-apart and offset from the axis centered between the panel sides;

wherein the means for connecting the plurality of panels together includes at least one joinery assembly; and

~~further comprising a second wherein the joinery assembly that includes at least one~~ bracket ~~attached to the struts of at least two panels, the at least one bracket having an opening extending therethrough; for accepting and a common tubular element that extends through the opening in the at least one bracket therein for connecting a plurality of at least two panels together.~~

33. (Amended) ~~The modular construction system of claim 32,~~ A modular construction system comprising:

an inventory of panel shapes derived from a three-dimensional grid defined by twenty-seven sub-cubes within a single larger cube, the panel shapes forming a plurality of panels having a plurality of sides and a plurality of corners;

a means for connecting a plurality of panels together at any angle through 360 degrees about any axis centered between the panel sides and at any dihedral angle with respect to each other for building three-dimensional structures;

wherein the plurality of panels include struts attached along the sides of each of the panels, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels, wherein the struts of the panels being connected are spaced-apart and offset from the axis centered between the panel sides;

wherein the means for connecting the plurality of panels together includes at least one joinery assembly;

wherein the joinery assembly includes at least one bracket attached to the struts of at least two panels, the bracket having an opening extending therethrough for accepting a common tubular element therein for connecting at least two panels together; and

wherein the ~~second~~ joinery assembly further includes at least one joint ~~closures~~ closure for covering the ~~space~~ spaced-apart opening and joinery assembly between the struts and ~~bracing~~ elements for securing the panels in place of connected panels.

Claims 34-46 have been added as follows:

34. A modular construction system comprising:

an inventory of panel shapes that are derived from a common format, wherein the inventory of panel shapes includes fifty-nine different panel shapes, wherein the panel shapes form panels having a plurality of sides and a plurality of corners;

a means for constructing a structure using panels from the inventory of panel shapes, wherein a plurality of panels are connected at a plurality of dihedral angles with respect to each other about a given axis centered between and parallel to the panel sides, and about given vertices where the axes between the panel sides being joined intersect;

wherein the plurality of panels include struts attached along the panel sides forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels; and

wherein the struts of the panels being joined are offset from, parallel to, and rotational about the axis centered between the panel sides.

35. The modular construction system of claim 34, further comprising at least two connection mechanisms for joining a plurality of panels about any given axis or vertice, wherein the connection mechanisms include a centerline element, at least two bridge elements, a plurality of brace elements, a plurality of anchorage elements and a plurality of joint closure elements.

36. The modular construction system of claim 35, wherein the centerline element includes a tubular segment having an opening extending therethrough with a longitudinal axis coincident with the axis centered between the panels being joined, wherein the opening facilitates the passage of utility lines through the centerline element.



37. The modular construction system of claim 35, wherein the bridge elements include webs and brackets that connect the struts of at least two adjoining panels to the centerline element.

38. The modular construction system of claim 37, wherein the webs and brackets create a spaced-apart opening between the struts of adjoining panels for the insertion of utility lines throughout the structure.

39. The modular construction system of claim 39, wherein the webs include at least one tab extension attached to the struts at the corners of the panels and at least one collar having an opening extending therethrough that is rotationally attached to the centerline element, wherein one end of the tab extension is attached to the strut and the other end of the tab extension is attached to the collar.

40. The modular construction system of claim 39, wherein the joint closure elements cover the spaced-apart opening between the struts of adjoining panels at the corners thereof.

41. The modular construction system of claim 39, wherein the brackets are attached to the struts along the sides of the panels and include an opening extending therethrough that is rotationally attached to the centerline element.

42. The modular construction system of claim 39, wherein the joint closure elements cover the spaced-apart opening between the struts of adjoining panels along the sides thereof.